

**Recra LabNet Philadelphia  
Analytical Report**

**Client :** TNU-HANFORD B99-078  
**RFW# :** 9909L008  
**SDG/SAF# :** B99-078/H0517

**W.O.# :** 10985-001-001-9999-00  
**Date Received:** 09-03-99

**\*REVISION\***

**METALS CASE NARRATIVE**

This package has been revised to include the addition of Antimony and Thallium.

1. This narrative covers the analyses of 10 soil samples.
2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary.
3. All analyses were performed within the required holding times.
4. The cooler temperature has been recorded on the Chain of Custody.
5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).
6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the PQL).
7. All preparation/method blanks (MB) were within method criteria {less than the Practical Quantitation Limit (3X the IDL) or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.
8. All ICP Interference Check Standards were within control limits.
9. All laboratory control samples (LCS) were within the laboratory control limits. Refer to the Inorganics Laboratory Control Standards Report.
10. The matrix spike (MS) recovery for Antimony was outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.

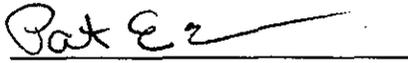
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The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 23 pages.

11. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A PDS was prepared at the following level:

<u>Sample ID</u>	<u>Element</u>	<u>PDS</u> <u>Concentration (ppb)</u>	<u>PDS</u> <u>% Recovery</u>
B0W9K0	Antimony	500	109.0

12. The duplicate analysis for 2 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.
13. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.



J. Michael Taylor  
Vice President  
Philadelphia Analytical Laboratory

mld/m09-008r

11-9-99  
Date



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# METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this

Recra Lot#: 9909L008

Leaching Procedure:   1310  1311  1312  Other:\_\_\_\_\_

CLP Metals    Digestion and    Analysis Methods:   ILM03.0  ILM04.0  

Metals Digestion Methods:   3005A  3010A  3015  3020A  ✓3050A  3051  200.7  SS17    
  Other: \_\_\_\_\_  

## Metals Analysis Methods

	SW846	EPA	STD MTD	EPA OSWR	USATHAMA
Aluminum	<u>  6010B  </u>	<u>  200.7  </u>			<u>  99  </u>
Antimony	<u>  ✓6010B  7041<sup>5</sup>  </u>	<u>  200.7  204.2  </u>			<u>  99  </u>
Arsenic	<u>  ✓6010B  7060A<sup>5</sup>  </u>	<u>  200.7  206.2  </u>	<u>  3113B  </u>		<u>  99  </u>
Barium	<u>  ✓6010B  </u>	<u>  200.7  </u>			<u>  99  </u>
Beryllium	<u>  ✓6010B  </u>	<u>  200.7  </u>			<u>  99  </u>
Bismuth	<u>  6010B<sup>1</sup>  </u>	<u>  200.7<sup>1</sup>  </u>		<u>  1620  </u>	<u>  99  </u>
Boron	<u>  6010B  </u>	<u>  200.7  </u>			<u>  99  </u>
Cadmium	<u>  ✓6010B  7131A<sup>5</sup>  </u>	<u>  200.7  213.2  </u>			<u>  99  </u>
Calcium	<u>  6010B  </u>	<u>  200.7  </u>			<u>  99  </u>
Chromium	<u>  ✓6010B  7191<sup>5</sup>  </u>	<u>  200.7  218.2  </u>			<u>  SS17  </u>
Cobalt	<u>  6010B  </u>	<u>  200.7  </u>			<u>  99  </u>
Copper	<u>  ✓6010B  7211<sup>5</sup>  </u>	<u>  200.7  220.2  </u>			<u>  99  </u>
Iron	<u>  6010B  </u>	<u>  200.7  </u>			<u>  99  </u>
Lead	<u>  ✓6010B  7421<sup>5</sup>  </u>	<u>  200.7  239.2  </u>	<u>  3113B  </u>		<u>  99  </u>
Lithium	<u>  6010B  7430<sup>4</sup>  </u>	<u>  200.7  </u>		<u>  1620  </u>	<u>  99  </u>
Magnesium	<u>  6010B  </u>	<u>  200.7  </u>			<u>  99  </u>
Manganese	<u>  6010B  </u>	<u>  200.7  </u>			<u>  99  </u>
Mercury	<u>  7470A<sup>3</sup>  ✓7471A<sup>3</sup>  </u>	<u>  245.1<sup>2</sup>  245.5<sup>2</sup>  </u>			<u>  99  </u>
Molybdenum	<u>  6010B  </u>	<u>  200.7  </u>			<u>  99  </u>
Nickel	<u>  ✓6010B  </u>	<u>  200.7  </u>			<u>  99  </u>
Potassium	<u>  6010B  7610<sup>4</sup>  </u>	<u>  200.7  258.1<sup>4</sup>  </u>			<u>  99  </u>
Rare Earths	<u>  6010B<sup>1</sup>  </u>	<u>  200.7<sup>1</sup>  </u>		<u>  1620  </u>	<u>  99  </u>
Selenium	<u>  ✓6010B  7740<sup>5</sup>  </u>	<u>  200.7  270.2  </u>	<u>  3113B  </u>		<u>  99  </u>
Silicon	<u>  6010B<sup>1</sup>  </u>	<u>  200.7  </u>		<u>  1620  </u>	<u>  99  </u>
Silica	<u>  6010B  </u>	<u>  200.7  </u>		<u>  1620  </u>	<u>  99  </u>
Silver	<u>  ✓6010B  7761<sup>5</sup>  </u>	<u>  200.7  272.2  </u>			<u>  99  </u>
Sodium	<u>  6010B  7770<sup>4</sup>  </u>	<u>  200.7  273.1<sup>4</sup>  </u>			<u>  99  </u>
Strontium	<u>  6010B  </u>	<u>  200.7  </u>			<u>  99  </u>
Thallium	<u>  ✓6010B  7841<sup>5</sup>  </u>	<u>  200.7  279.2  200.9  </u>			<u>  99  </u>
Tin	<u>  6010B  </u>	<u>  200.7  </u>			<u>  99  </u>
Titanium	<u>  6010B  </u>	<u>  200.7  </u>			<u>  99  </u>
Uranium	<u>  6010B<sup>1</sup>  </u>	<u>  200.7<sup>1</sup>  </u>		<u>  1620  </u>	<u>  99  </u>
Vanadium	<u>  ✓6010B  </u>	<u>  200.7  </u>			<u>  99  </u>
Zinc	<u>  ✓6010B  </u>	<u>  200.7  </u>			<u>  99  </u>
Zirconium	<u>  6010B<sup>1</sup>  </u>	<u>  200.7<sup>1</sup>  </u>		<u>  1620  </u>	<u>  99  </u>

Other: \_\_\_\_\_

Method: \_\_\_\_\_

# METHOD REFERENCES AND DATA QUALIFIERS

## DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

\* = Indicates that the original sample result is greater than 4x the spike amount added.

## ABBREVIATIONS

MB = Method or Preparation Blank.

MS = Matrix Spike.

MSD = Matrix Spike Duplicate.

REP = Sample Replicate

LCS = Laboratory Control Sample.

NC = Not calculated.

## ANALYTICAL METAL METHODS

1. Not included in the method element list.
2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, 0.1 grams of sample is taken to a final volume of 50 mL (including all reagents).
3. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, three 0.1 gram of sample is taken to a final volume of 50 mL (including all reagents).
4. Flame AA.
5. Graphite Furnace AA.

RFW 21-21L-033/N-10/96

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INORGANICS DATA SUMMARY REPORT 11/09/99

CLIENT: TNU-HANFORD B99-078

RECRA LOT #: 9909L008

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
*****	*****	*****	*****	*****	*****	*****
-001	B0W9K0	Silver, Total	0.10 u	MG/KG	0.10	1.0
		Arsenic, Total	2.7	MG/KG	0.34	1.0
		Barium, Total	70.3	MG/KG	0.03	1.0
		Beryllium, Total	0.32	MG/KG	0.01	1.0
		Cadmium, Total	0.19	MG/KG	0.03	1.0
		Chromium, Total	11.0	MG/KG	0.08	1.0
		Copper, Total	12.7	MG/KG	0.12	1.0
		Mercury, Total	0.02	MG/KG	0.02	1.0
		Nickel, Total	10.7	MG/KG	0.12	1.0
		Lead, Total	4.7	MG/KG	0.22	1.0
		Antimony, Total	0.26 u	MG/KG	0.26	1.0
		Selenium, Total	0.46	MG/KG	0.38	1.0
		Thallium, Total	0.92	MG/KG	0.55	1.0
		Vanadium, Total	39.1	MG/KG	0.06	1.0
		Zinc, Total	49.9	MG/KG	0.08	1.0
-002	B0W9K1	Silver, Total	0.11 u	MG/KG	0.11	1.0
		Arsenic, Total	3.3	MG/KG	0.35	1.0
		Barium, Total	75.1	MG/KG	0.03	1.0
		Beryllium, Total	0.36	MG/KG	0.01	1.0
		Cadmium, Total	0.17	MG/KG	0.03	1.0
		Chromium, Total	12.0	MG/KG	0.08	1.0
		Copper, Total	14.2	MG/KG	0.13	1.0
		Mercury, Total	0.02	MG/KG	0.02	1.0
		Nickel, Total	11.7	MG/KG	0.13	1.0
		Lead, Total	5.0	MG/KG	0.22	1.0
		Antimony, Total	0.27 u	MG/KG	0.27	1.0
		Selenium, Total	0.39 u	MG/KG	0.39	1.0
		Thallium, Total	0.56 u	MG/KG	0.56	1.0
		Vanadium, Total	40.0	MG/KG	0.06	1.0
		Zinc, Total	44.3	MG/KG	0.08	1.0

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RECRA LOT #: 9909L008

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	B0W9K2	Silver, Total	0.11 u	MG/KG	0.11	1.0
		Arsenic, Total	2.8	MG/KG	0.36	1.0
		Barium, Total	87.0	MG/KG	0.03	1.0
		Beryllium, Total	0.35	MG/KG	0.01	1.0
		Cadmium, Total	0.10	MG/KG	0.03	1.0
		Chromium, Total	13.7	MG/KG	0.09	1.0
		Copper, Total	21.0	MG/KG	0.13	1.0
		Mercury, Total	0.03	MG/KG	0.02	1.0
		Nickel, Total	11.4	MG/KG	0.13	1.0
		Lead, Total	6.2	MG/KG	0.23	1.0
		Antimony, Total	0.27 u	MG/KG	0.27	1.0
		Selenium, Total	0.46	MG/KG	0.40	1.0
		Thallium, Total	0.95	MG/KG	0.57	1.0
		Vanadium, Total	41.3	MG/KG	0.06	1.0
		Zinc, Total	42.7	MG/KG	0.09	1.0
-004	B0W9K3	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Arsenic, Total	2.9	MG/KG	0.38	1.0
		Barium, Total	127	MG/KG	0.03	1.0
		Beryllium, Total	0.37	MG/KG	0.01	1.0
		Cadmium, Total	0.06	MG/KG	0.03	1.0
		Chromium, Total	13.1	MG/KG	0.09	1.0
		Copper, Total	15.9	MG/KG	0.14	1.0
		Mercury, Total	0.02	MG/KG	0.02	1.0
		Nickel, Total	12.0	MG/KG	0.14	1.0
		Lead, Total	6.8	MG/KG	0.24	1.0
		Antimony, Total	0.29 u	MG/KG	0.29	1.0
		Selenium, Total	0.43 u	MG/KG	0.43	1.0
		Thallium, Total	0.62 u	MG/KG	0.62	1.0
		Vanadium, Total	30.0	MG/KG	0.07	1.0
		Zinc, Total	38.5	MG/KG	0.09	1.0

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INORGANICS DATA SUMMARY REPORT 11/09/99

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RECRA LOT #: 9909L008

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	B0W9K4	Silver, Total	0.1	u MG/KG	0.1	1.0
		Arsenic, Total	5.5	MG/KG	0.33	1.0
		Barium, Total	107	MG/KG	0.03	1.0
		Beryllium, Total	0.51	MG/KG	0.01	1.0
		Cadmium, Total	0.08	MG/KG	0.03	1.0
		Chromium, Total	13.1	MG/KG	0.08	1.0
		Copper, Total	18.3	MG/KG	0.12	1.0
		Mercury, Total	0.02	MG/KG	0.02	1.0
		Nickel, Total	13.5	MG/KG	0.12	1.0
		Lead, Total	10.3	MG/KG	0.21	1.0
		Antimony, Total	0.25	u MG/KG	0.25	1.0
		Selenium, Total	0.37	u MG/KG	0.37	1.0
		Thallium, Total	0.53	u MG/KG	0.53	1.0
		Vanadium, Total	37.2	MG/KG	0.06	1.0
		Zinc, Total	46.9	MG/KG	0.08	1.0
-006	B0W9K5	Silver, Total	0.08	u MG/KG	0.08	1.0
		Arsenic, Total	2.5	MG/KG	0.28	1.0
		Barium, Total	66.0	MG/KG	0.03	1.0
		Beryllium, Total	0.34	MG/KG	0.008	1.0
		Cadmium, Total	0.11	MG/KG	0.03	1.0
		Chromium, Total	3.7	MG/KG	0.07	1.0
		Copper, Total	13.0	MG/KG	0.10	1.0
		Mercury, Total	0.02	u MG/KG	0.02	1.0
		Nickel, Total	8.5	MG/KG	0.10	1.0
		Lead, Total	2.4	MG/KG	0.18	1.0
		Antimony, Total	0.21	u MG/KG	0.21	1.0
		Selenium, Total	0.56	MG/KG	0.31	1.0
		Thallium, Total	0.48	MG/KG	0.44	1.0
		Vanadium, Total	54.5	MG/KG	0.05	1.0
		Zinc, Total	41.3	MG/KG	0.07	1.0

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INORGANICS DATA SUMMARY REPORT 11/09/99

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RECRA LOT #: 9909L008

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
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-007	B0W9K6	Silver, Total	0.09	u MG/KG	0.09	1.0
		Arsenic, Total	2.8	MG/KG	0.29	1.0
		Barium, Total	64.0	MG/KG	0.03	1.0
		Beryllium, Total	0.39	MG/KG	0.009	1.0
		Cadmium, Total	0.07	MG/KG	0.03	1.0
		Chromium, Total	6.7	MG/KG	0.07	1.0
		Copper, Total	16.4	MG/KG	0.11	1.0
		Mercury, Total	0.02	u MG/KG	0.02	1.0
		Nickel, Total	7.6	MG/KG	0.11	1.0
		Lead, Total	4.9	MG/KG	0.19	1.0
		Antimony, Total	0.22	u MG/KG	0.22	1.0
		Selenium, Total	0.64	MG/KG	0.33	1.0
		Thallium, Total	0.47	u MG/KG	0.47	1.0
		Vanadium, Total	36.2	MG/KG	0.05	1.0
		Zinc, Total	37.3	MG/KG	0.07	1.0
-008	B0W9K7	Silver, Total	0.10	u MG/KG	0.10	1.0
		Arsenic, Total	3.1	MG/KG	0.34	1.0
		Barium, Total	73.7	MG/KG	0.03	1.0
		Beryllium, Total	0.33	MG/KG	0.01	1.0
		Cadmium, Total	0.09	MG/KG	0.03	1.0
		Chromium, Total	7.1	MG/KG	0.08	1.0
		Copper, Total	14.4	MG/KG	0.12	1.0
		Mercury, Total	0.02	u MG/KG	0.02	1.0
		Nickel, Total	9.3	MG/KG	0.12	1.0
		Lead, Total	4.2	MG/KG	0.22	1.0
		Antimony, Total	0.26	u MG/KG	0.26	1.0
		Selenium, Total	0.56	MG/KG	0.38	1.0
		Thallium, Total	0.99	MG/KG	0.55	1.0
		Vanadium, Total	53.3	MG/KG	0.06	1.0
		Zinc, Total	43.3	MG/KG	0.08	1.0

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INORGANICS DATA SUMMARY REPORT 11/09/99

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RECRA LOT #: 9909L008

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
*****	*****	*****	*****	*****	*****	*****
-009	B0W9K8	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	3.6	MG/KG	0.27	1.0
		Barium, Total	68.2	MG/KG	0.02	1.0
		Beryllium, Total	0.33	MG/KG	0.008	1.0
		Cadmium, Total	0.03	MG/KG	0.02	1.0
		Chromium, Total	6.2	MG/KG	0.07	1.0
		Copper, Total	15.1	MG/KG	0.1	1.0
		Mercury, Total	0.02	MG/KG	0.02	1.0
		Nickel, Total	8.3	MG/KG	0.1	1.0
		Lead, Total	4.2	MG/KG	0.17	1.0
		Antimony, Total	0.20 u	MG/KG	0.20	1.0
		Selenium, Total	0.44	MG/KG	0.30	1.0
		Thallium, Total	0.67	MG/KG	0.43	1.0
		Vanadium, Total	41.4	MG/KG	0.05	1.0
		Zinc, Total	38.6	MG/KG	0.07	1.0
-010	B0W9L9	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	2.7	MG/KG	0.25	1.0
		Barium, Total	58.6	MG/KG	0.02	1.0
		Beryllium, Total	0.33	MG/KG	0.008	1.0
		Cadmium, Total	0.02 u	MG/KG	0.02	1.0
		Chromium, Total	5.9	MG/KG	0.06	1.0
		Copper, Total	13.2	MG/KG	0.09	1.0
		Mercury, Total	0.02	MG/KG	0.02	1.0
		Nickel, Total	7.8	MG/KG	0.09	1.0
		Lead, Total	4.3	MG/KG	0.16	1.0
		Antimony, Total	0.19 u	MG/KG	0.19	1.0
		Selenium, Total	0.44	MG/KG	0.28	1.0
		Thallium, Total	0.56	MG/KG	0.41	1.0
		Vanadium, Total	42.3	MG/KG	0.05	1.0
		Zinc, Total	36.4	MG/KG	0.06	1.0

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INORGANICS METHOD BLANK DATA SUMMARY PAGE 11/09/99

CLIENT: TNU-HANFORD B99-078  
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 9909L008

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	99L0654-MB1	Silver, Total	0.10 u	MG/KG	0.10	1.0
		Arsenic, Total	0.33 u	MG/KG	0.33	1.0
		Barium, Total	0.04	MG/KG	0.03	1.0
		Beryllium, Total	0.01 u	MG/KG	0.01	1.0
		Cadmium, Total	0.03 u	MG/KG	0.03	1.0
		Chromium, Total	0.08 u	MG/KG	0.08	1.0
		Copper, Total	0.12 u	MG/KG	0.12	1.0
		Nickel, Total	0.12 u	MG/KG	0.12	1.0
		Lead, Total	0.21 u	MG/KG	0.21	1.0
		Antimony, Total	0.25 u	MG/KG	0.25	1.0
		Selenium, Total	0.37 u	MG/KG	0.37	1.0
		Thallium, Total	0.53 u	MG/KG	0.53	1.0
		Vanadium, Total	0.06 u	MG/KG	0.06	1.0
		Zinc, Total	0.08 u	MG/KG	0.08	1.0
BLANK1	99C0278-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

Recra LabNet - Lionville

INORGANICS ACCURACY REPORT 11/09/99

CLIENT: TNU-HANFORD B99-078

RECRA LOT #: 9909L008

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	BOWSKO	Silver, Total	4.7	0.10u	5.3	88.7	1.0
		Arsenic, Total	197	2.7	212	92.0	1.0
		Barium, Total	268	70.3	212	93.6	1.0
		Beryllium, Total	5.1	0.32	5.3	90.1	1.0
		Cadmium, Total	5.0	0.19	5.3	90.7	1.0
		Chromium, Total	31.6	11.0	21.2	97.2	1.0
		Copper, Total	37.8	12.7	26.4	95.1	1.0
		Mercury, Total	0.19	0.02	0.15	109.1	1.0
		Nickel, Total	58.6	10.7	52.9	90.5	1.0
		Lead, Total	52.9	4.7	52.9	91.1	1.0
		Antimony, Total	24.6	0.26u	52.9	46.5	1.0
		Selenium, Total	190	0.46	212	89.8	1.0
		Thallium, Total	194	0.92	212	91.5	1.0
		Vanadium, Total	93.8	39.1	52.9	103.4	1.0
		Zinc, Total	98.2	49.9	52.9	91.3	1.0

011

Recra LabNet - Lionville

INORGANICS PRECISION REPORT 11/09/99

CLIENT: TNU-HANFORD B99-078

RECRA LOT #: 9909L008

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL			DILUTION
			RESULT	REPLICATE	RPD	
-001REP	BOW9K0	Silver, Total	0.10u	0.10u	NC	1.0
		Arsenic, Total	2.7	2.8	3.6	1.0
		Barium, Total	70.3	72.9	3.6	1.0
		Beryllium, Total	0.32	0.30	7.8	1.0
		Cadmium, Total	0.19	0.20	5.2	1.0
		Chromium, Total	11.0	12.5	12.8	1.0
		Copper, Total	12.7	14.2	11.2	1.0
		Mercury, Total	0.02	0.02	5.4	1.0
		Nickel, Total	10.7	11.9	10.6	1.0
		Lead, Total	4.7	5.3	12.0	1.0
		Antimony, Total	0.26u	0.26u	NC	1.0
		Selenium, Total	0.46	0.39u	<del>NC</del> 200	1.0
		Thallium, Total	0.92	0.69	28.8	1.0
		Vanadium, Total	39.1	41.0	4.7	1.0
		Zinc, Total	49.9	51.2	2.6	1.0

Correction  
11/9/99

Recra LabNet - Lionville

INORGANICS LABORATORY CONTROL STANDARDS REPORT 11/09/99

CLIENT: TNU-HANFORD B99-078

RECRA LOT #: 9909L008

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED	SPIKED	UNITS	%RECOV
			SAMPLE	AMOUNT		
LCS1	99L0654-LC1	Silver, LCS	49.0	50.0	MG/KG	98.0
		Arsenic, LCS	960	1000	MG/KG	96.0
		Barium, LCS	493	500	MG/KG	98.6
		Beryllium, LCS	24.3	25.0	MG/KG	97.2
		Cadmium, LCS	24.3	25.0	MG/KG	97.2
		Chromium, LCS	49.7	50.0	MG/KG	99.4
		Copper, LCS	123	125	MG/KG	98.6
		Nickel, LCS	195	200	MG/KG	97.6
		Lead, LCS	242	250	MG/KG	97.0
		Antimony, LCS	289	300	MG/KG	96.4
		Selenium, LCS	937	1000	MG/KG	93.7
		Thallium, LCS	984	1000	MG/KG	98.4
		Vanadium, LCS	252	250	MG/KG	100.7
		Zinc, LCS	96.0	100	MG/KG	96.0
LCS1	99C0278-LC1	Mercury, LCS	1.1	1.0	MG/KG	109.5

Recra LabNet - Lionville Laboratory  
 INORGANIC ANALYTICAL DATA PACKAGE FOR  
 TNU-HANFORD B99-078

DATE RECEIVED: 09/03/99

RFW LOT # :9909L008

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BOW9K0						
SILVER, TOTAL	001	S	99L0654	09/01/99	09/24/99	09/29/99
SILVER, TOTAL	001 REP	S	99L0654	09/01/99	09/24/99	09/29/99
SILVER, TOTAL	001 MS	S	99L0654	09/01/99	09/24/99	09/29/99
ARSENIC, TOTAL	001	S	99L0654	09/01/99	09/24/99	09/29/99
ARSENIC, TOTAL	001 REP	S	99L0654	09/01/99	09/24/99	09/29/99
ARSENIC, TOTAL	001 MS	S	99L0654	09/01/99	09/24/99	09/29/99
BARIUM, TOTAL	001	S	99L0654	09/01/99	09/24/99	09/29/99
BARIUM, TOTAL	001 REP	S	99L0654	09/01/99	09/24/99	09/29/99
BARIUM, TOTAL	001 MS	S	99L0654	09/01/99	09/24/99	09/29/99
BERYLLIUM, TOTAL	001	S	99L0654	09/01/99	09/24/99	09/29/99
BERYLLIUM, TOTAL	001 REP	S	99L0654	09/01/99	09/24/99	09/29/99
BERYLLIUM, TOTAL	001 MS	S	99L0654	09/01/99	09/24/99	09/29/99
CADMIUM, TOTAL	001	S	99L0654	09/01/99	09/24/99	09/29/99
CADMIUM, TOTAL	001 REP	S	99L0654	09/01/99	09/24/99	09/29/99
CADMIUM, TOTAL	001 MS	S	99L0654	09/01/99	09/24/99	09/29/99
CHROMIUM, TOTAL	001	S	99L0654	09/01/99	09/24/99	09/29/99
CHROMIUM, TOTAL	001 REP	S	99L0654	09/01/99	09/24/99	09/29/99
CHROMIUM, TOTAL	001 MS	S	99L0654	09/01/99	09/24/99	09/29/99
COPPER, TOTAL	001	S	99L0654	09/01/99	09/24/99	09/29/99
COPPER, TOTAL	001 REP	S	99L0654	09/01/99	09/24/99	09/29/99
COPPER, TOTAL	001 MS	S	99L0654	09/01/99	09/24/99	09/29/99
MERCURY, TOTAL	001	S	99C0278	09/01/99	09/24/99	09/27/99
MERCURY, TOTAL	001 REP	S	99C0278	09/01/99	09/24/99	09/27/99
MERCURY, TOTAL	001 MS	S	99C0278	09/01/99	09/24/99	09/27/99
NICKEL, TOTAL	001	S	99L0654	09/01/99	09/24/99	09/29/99
NICKEL, TOTAL	001 REP	S	99L0654	09/01/99	09/24/99	09/29/99
NICKEL, TOTAL	001 MS	S	99L0654	09/01/99	09/24/99	09/29/99
LEAD, TOTAL	001	S	99L0654	09/01/99	09/24/99	09/29/99
LEAD, TOTAL	001 REP	S	99L0654	09/01/99	09/24/99	09/29/99
LEAD, TOTAL	001 MS	S	99L0654	09/01/99	09/24/99	09/29/99
ANTIMONY, TOTAL	001	S	99L0654	09/01/99	09/24/99	09/29/99
ANTIMONY, TOTAL	001 REP	S	99L0654	09/01/99	09/24/99	09/29/99
ANTIMONY, TOTAL	001 MS	S	99L0654	09/01/99	09/24/99	09/29/99
SELENIUM, TOTAL	001	S	99L0654	09/01/99	09/24/99	09/29/99
SELENIUM, TOTAL	001 REP	S	99L0654	09/01/99	09/24/99	09/29/99

014

Recra LabNet - Lionville Laboratory  
 INORGANIC ANALYTICAL DATA PACKAGE FOR  
 TNU-HANFORD B99-078

DATE RECEIVED: 09/03/99

RFW LOT # :9909L008

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SELENIUM, TOTAL	001 MS	S	99L0654	09/01/99	09/24/99	09/29/99
THALLIUM, TOTAL	001	S	99L0654	09/01/99	09/24/99	09/29/99
THALLIUM, TOTAL	001 REP	S	99L0654	09/01/99	09/24/99	09/29/99
THALLIUM, TOTAL	001 MS	S	99L0654	09/01/99	09/24/99	09/29/99
VANADIUM, TOTAL	001	S	99L0654	09/01/99	09/24/99	09/29/99
VANADIUM, TOTAL	001 REP	S	99L0654	09/01/99	09/24/99	09/29/99
VANADIUM, TOTAL	001 MS	S	99L0654	09/01/99	09/24/99	09/29/99
ZINC, TOTAL	001	S	99L0654	09/01/99	09/24/99	09/29/99
ZINC, TOTAL	001 REP	S	99L0654	09/01/99	09/24/99	09/29/99
ZINC, TOTAL	001 MS	S	99L0654	09/01/99	09/24/99	09/29/99

B0W9K1

SILVER, TOTAL	002	S	99L0654	09/01/99	09/24/99	09/29/99
ARSENIC, TOTAL	002	S	99L0654	09/01/99	09/24/99	09/29/99
BARIUM, TOTAL	002	S	99L0654	09/01/99	09/24/99	09/29/99
BERYLLIUM, TOTAL	002	S	99L0654	09/01/99	09/24/99	09/29/99
CADMIUM, TOTAL	002	S	99L0654	09/01/99	09/24/99	09/29/99
CHROMIUM, TOTAL	002	S	99L0654	09/01/99	09/24/99	09/29/99
COPPER, TOTAL	002	S	99L0654	09/01/99	09/24/99	09/29/99
MERCURY, TOTAL	002	S	99C0278	09/01/99	09/24/99	09/27/99
NICKEL, TOTAL	002	S	99L0654	09/01/99	09/24/99	09/29/99
LEAD, TOTAL	002	S	99L0654	09/01/99	09/24/99	09/29/99
ANTIMONY, TOTAL	002	S	99L0654	09/01/99	09/24/99	09/29/99
SELENIUM, TOTAL	002	S	99L0654	09/01/99	09/24/99	09/29/99
THALLIUM, TOTAL	002	S	99L0654	09/01/99	09/24/99	09/29/99
VANADIUM, TOTAL	002	S	99L0654	09/01/99	09/24/99	09/29/99
ZINC, TOTAL	002	S	99L0654	09/01/99	09/24/99	09/29/99

B0W9K2

SILVER, TOTAL	003	S	99L0654	09/01/99	09/24/99	09/29/99
ARSENIC, TOTAL	003	S	99L0654	09/01/99	09/24/99	09/29/99
BARIUM, TOTAL	003	S	99L0654	09/01/99	09/24/99	09/29/99
BERYLLIUM, TOTAL	003	S	99L0654	09/01/99	09/24/99	09/29/99
CADMIUM, TOTAL	003	S	99L0654	09/01/99	09/24/99	09/29/99
CHROMIUM, TOTAL	003	S	99L0654	09/01/99	09/24/99	09/29/99
COPPER, TOTAL	003	S	99L0654	09/01/99	09/24/99	09/29/99

Recra LabNet - Lionville Laboratory  
 INORGANIC ANALYTICAL DATA PACKAGE FOR  
 TNU-HANFORD B99-078

DATE RECEIVED: 09/03/99

RFW LOT # :9909L008

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY, TOTAL	003	S	99C0278	09/01/99	09/24/99	09/27/99
NICKEL, TOTAL	003	S	99L0654	09/01/99	09/24/99	09/29/99
LEAD, TOTAL	003	S	99L0654	09/01/99	09/24/99	09/29/99
ANTIMONY, TOTAL	003	S	99L0654	09/01/99	09/24/99	09/29/99
SELENIUM, TOTAL	003	S	99L0654	09/01/99	09/24/99	09/29/99
THALLIUM, TOTAL	003	S	99L0654	09/01/99	09/24/99	09/29/99
VANADIUM, TOTAL	003	S	99L0654	09/01/99	09/24/99	09/29/99
ZINC, TOTAL	003	S	99L0654	09/01/99	09/24/99	09/29/99

BOW9K3

SILVER, TOTAL	004	S	99L0654	09/01/99	09/24/99	09/29/99
ARSENIC, TOTAL	004	S	99L0654	09/01/99	09/24/99	09/29/99
BARIUM, TOTAL	004	S	99L0654	09/01/99	09/24/99	09/29/99
BERYLLIUM, TOTAL	004	S	99L0654	09/01/99	09/24/99	09/29/99
CADMIUM, TOTAL	004	S	99L0654	09/01/99	09/24/99	09/29/99
CHROMIUM, TOTAL	004	S	99L0654	09/01/99	09/24/99	09/29/99
COPPER, TOTAL	004	S	99L0654	09/01/99	09/24/99	09/29/99
MERCURY, TOTAL	004	S	99C0278	09/01/99	09/24/99	09/27/99
NICKEL, TOTAL	004	S	99L0654	09/01/99	09/24/99	09/29/99
LEAD, TOTAL	004	S	99L0654	09/01/99	09/24/99	09/29/99
ANTIMONY, TOTAL	004	S	99L0654	09/01/99	09/24/99	09/29/99
SELENIUM, TOTAL	004	S	99L0654	09/01/99	09/24/99	09/29/99
THALLIUM, TOTAL	004	S	99L0654	09/01/99	09/24/99	09/29/99
VANADIUM, TOTAL	004	S	99L0654	09/01/99	09/24/99	09/29/99
ZINC, TOTAL	004	S	99L0654	09/01/99	09/24/99	09/29/99

BOW9K4

SILVER, TOTAL	005	S	99L0654	09/01/99	09/24/99	09/29/99
ARSENIC, TOTAL	005	S	99L0654	09/01/99	09/24/99	09/29/99
BARIUM, TOTAL	005	S	99L0654	09/01/99	09/24/99	09/29/99
BERYLLIUM, TOTAL	005	S	99L0654	09/01/99	09/24/99	09/29/99
CADMIUM, TOTAL	005	S	99L0654	09/01/99	09/24/99	09/29/99
CHROMIUM, TOTAL	005	S	99L0654	09/01/99	09/24/99	09/29/99
COPPER, TOTAL	005	S	99L0654	09/01/99	09/24/99	09/29/99
MERCURY, TOTAL	005	S	99C0278	09/01/99	09/24/99	09/27/99
NICKEL, TOTAL	005	S	99L0654	09/01/99	09/24/99	09/29/99

016

Recra LabNet - Lionville Laboratory  
 INORGANIC ANALYTICAL DATA PACKAGE FOR  
 TNU-HANFORD B99-078

DATE RECEIVED: 09/03/99

RFW LOT # :9909L008

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
LEAD, TOTAL	005	S	99L0654	09/01/99	09/24/99	09/29/99
ANTIMONY, TOTAL	005	S	99L0654	09/01/99	09/24/99	09/29/99
SELENIUM, TOTAL	005	S	99L0654	09/01/99	09/24/99	09/29/99
THALLIUM, TOTAL	005	S	99L0654	09/01/99	09/24/99	09/29/99
VANADIUM, TOTAL	005	S	99L0654	09/01/99	09/24/99	09/29/99
ZINC, TOTAL	005	S	99L0654	09/01/99	09/24/99	09/29/99

BOW9K5

SILVER, TOTAL	006	S	99L0654	09/01/99	09/24/99	09/29/99
ARSENIC, TOTAL	006	S	99L0654	09/01/99	09/24/99	09/29/99
BARIUM, TOTAL	006	S	99L0654	09/01/99	09/24/99	09/29/99
BERYLLIUM, TOTAL	006	S	99L0654	09/01/99	09/24/99	09/29/99
CADMIUM, TOTAL	006	S	99L0654	09/01/99	09/24/99	09/29/99
CHROMIUM, TOTAL	006	S	99L0654	09/01/99	09/24/99	09/29/99
COPPER, TOTAL	006	S	99L0654	09/01/99	09/24/99	09/29/99
MERCURY, TOTAL	006	S	99C0278	09/01/99	09/24/99	09/27/99
NICKEL, TOTAL	006	S	99L0654	09/01/99	09/24/99	09/29/99
LEAD, TOTAL	006	S	99L0654	09/01/99	09/24/99	09/29/99
ANTIMONY, TOTAL	006	S	99L0654	09/01/99	09/24/99	09/29/99
SELENIUM, TOTAL	006	S	99L0654	09/01/99	09/24/99	09/29/99
THALLIUM, TOTAL	006	S	99L0654	09/01/99	09/24/99	09/29/99
VANADIUM, TOTAL	006	S	99L0654	09/01/99	09/24/99	09/29/99
ZINC, TOTAL	006	S	99L0654	09/01/99	09/24/99	09/29/99

BOW9K6

SILVER, TOTAL	007	S	99L0654	09/01/99	09/24/99	09/29/99
ARSENIC, TOTAL	007	S	99L0654	09/01/99	09/24/99	09/29/99
BARIUM, TOTAL	007	S	99L0654	09/01/99	09/24/99	09/29/99
BERYLLIUM, TOTAL	007	S	99L0654	09/01/99	09/24/99	09/29/99
CADMIUM, TOTAL	007	S	99L0654	09/01/99	09/24/99	09/29/99
CHROMIUM, TOTAL	007	S	99L0654	09/01/99	09/24/99	09/29/99
COPPER, TOTAL	007	S	99L0654	09/01/99	09/24/99	09/29/99
MERCURY, TOTAL	007	S	99C0278	09/01/99	09/24/99	09/27/99
NICKEL, TOTAL	007	S	99L0654	09/01/99	09/24/99	09/29/99
LEAD, TOTAL	007	S	99L0654	09/01/99	09/24/99	09/29/99
ANTIMONY, TOTAL	007	S	99L0654	09/01/99	09/24/99	09/29/99

Recra LabNet - Lionville Laboratory  
 INORGANIC ANALYTICAL DATA PACKAGE FOR  
 TNU-HANFORD B99-078

DATE RECEIVED: 09/03/99

RFW LOT # :9909L008

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SELENIUM, TOTAL	007	S	99L0654	09/01/99	09/24/99	09/29/99
THALLIUM, TOTAL	007	S	99L0654	09/01/99	09/24/99	09/29/99
VANADIUM, TOTAL	007	S	99L0654	09/01/99	09/24/99	09/29/99
ZINC, TOTAL	007	S	99L0654	09/01/99	09/24/99	09/29/99

BOW9K7

SILVER, TOTAL	008	S	99L0654	09/01/99	09/24/99	09/29/99
ARSENIC, TOTAL	008	S	99L0654	09/01/99	09/24/99	09/29/99
BARIUM, TOTAL	008	S	99L0654	09/01/99	09/24/99	09/29/99
BERYLLIUM, TOTAL	008	S	99L0654	09/01/99	09/24/99	09/29/99
CADMIUM, TOTAL	008	S	99L0654	09/01/99	09/24/99	09/29/99
CHROMIUM, TOTAL	008	S	99L0654	09/01/99	09/24/99	09/29/99
COPPER, TOTAL	008	S	99L0654	09/01/99	09/24/99	09/29/99
MERCURY, TOTAL	008	S	99C0278	09/01/99	09/24/99	09/27/99
NICKEL, TOTAL	008	S	99L0654	09/01/99	09/24/99	09/29/99
LEAD, TOTAL	008	S	99L0654	09/01/99	09/24/99	09/29/99
ANTIMONY, TOTAL	008	S	99L0654	09/01/99	09/24/99	09/29/99
SELENIUM, TOTAL	008	S	99L0654	09/01/99	09/24/99	09/29/99
THALLIUM, TOTAL	008	S	99L0654	09/01/99	09/24/99	09/29/99
VANADIUM, TOTAL	008	S	99L0654	09/01/99	09/24/99	09/29/99
ZINC, TOTAL	008	S	99L0654	09/01/99	09/24/99	09/29/99

BOW9K8

SILVER, TOTAL	009	S	99L0654	09/01/99	09/24/99	09/29/99
ARSENIC, TOTAL	009	S	99L0654	09/01/99	09/24/99	09/29/99
BARIUM, TOTAL	009	S	99L0654	09/01/99	09/24/99	09/29/99
BERYLLIUM, TOTAL	009	S	99L0654	09/01/99	09/24/99	09/29/99
CADMIUM, TOTAL	009	S	99L0654	09/01/99	09/24/99	09/29/99
CHROMIUM, TOTAL	009	S	99L0654	09/01/99	09/24/99	09/29/99
COPPER, TOTAL	009	S	99L0654	09/01/99	09/24/99	09/29/99
MERCURY, TOTAL	009	S	99C0278	09/01/99	09/24/99	09/27/99
NICKEL, TOTAL	009	S	99L0654	09/01/99	09/24/99	09/29/99
LEAD, TOTAL	009	S	99L0654	09/01/99	09/24/99	09/29/99
ANTIMONY, TOTAL	009	S	99L0654	09/01/99	09/24/99	09/29/99
SELENIUM, TOTAL	009	S	99L0654	09/01/99	09/24/99	09/29/99
THALLIUM, TOTAL	009	S	99L0654	09/01/99	09/24/99	09/29/99

Recra LabNet - Lionville Laboratory  
 INORGANIC ANALYTICAL DATA PACKAGE FOR  
 TNU-HANFORD B99-078

DATE RECEIVED: 09/03/99

RFW LOT # :9909L008

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
VANADIUM, TOTAL	009	S	99L0654	09/01/99	09/24/99	09/29/99
ZINC, TOTAL	009	S	99L0654	09/01/99	09/24/99	09/29/99
B0W9L9						
SILVER, TOTAL	010	S	99L0654	09/01/99	09/24/99	09/29/99
ARSENIC, TOTAL	010	S	99L0654	09/01/99	09/24/99	09/29/99
BARIUM, TOTAL	010	S	99L0654	09/01/99	09/24/99	09/29/99
BERYLLIUM, TOTAL	010	S	99L0654	09/01/99	09/24/99	09/29/99
CADMIUM, TOTAL	010	S	99L0654	09/01/99	09/24/99	09/29/99
CHROMIUM, TOTAL	010	S	99L0654	09/01/99	09/24/99	09/29/99
COPPER, TOTAL	010	S	99L0654	09/01/99	09/24/99	09/29/99
MERCURY, TOTAL	010	S	99C0278	09/01/99	09/24/99	09/27/99
NICKEL, TOTAL	010	S	99L0654	09/01/99	09/24/99	09/29/99
LEAD, TOTAL	010	S	99L0654	09/01/99	09/24/99	09/29/99
ANTIMONY, TOTAL	010	S	99L0654	09/01/99	09/24/99	09/29/99
SELENIUM, TOTAL	010	S	99L0654	09/01/99	09/24/99	09/29/99
THALLIUM, TOTAL	010	S	99L0654	09/01/99	09/24/99	09/29/99
VANADIUM, TOTAL	010	S	99L0654	09/01/99	09/24/99	09/29/99
ZINC, TOTAL	010	S	99L0654	09/01/99	09/24/99	09/29/99

LAB QC:

SILVER LABORATORY	LC1 BS	S	99L0654	N/A	09/24/99	09/29/99
SILVER, TOTAL	MB1	S	99L0654	N/A	09/24/99	09/29/99
ARSENIC LABORATORY	LC1 BS	S	99L0654	N/A	09/24/99	09/29/99
ARSENIC, TOTAL	MB1	S	99L0654	N/A	09/24/99	09/29/99
BARIUM LABORATORY	LC1 BS	S	99L0654	N/A	09/24/99	09/29/99
BARIUM, TOTAL	MB1	S	99L0654	N/A	09/24/99	09/29/99
BERYLLIUM LABORATORY	LC1 BS	S	99L0654	N/A	09/24/99	09/29/99
BERYLLIUM, TOTAL	MB1	S	99L0654	N/A	09/24/99	09/29/99
CADMIUM LABORATORY	LC1 BS	S	99L0654	N/A	09/24/99	09/29/99
CADMIUM, TOTAL	MB1	S	99L0654	N/A	09/24/99	09/29/99
CHROMIUM LABORATORY	LC1 BS	S	99L0654	N/A	09/24/99	09/29/99
CHROMIUM, TOTAL	MB1	S	99L0654	N/A	09/24/99	09/29/99
COPPER LABORATORY	LC1 BS	S	99L0654	N/A	09/24/99	09/29/99
COPPER, TOTAL	MB1	S	99L0654	N/A	09/24/99	09/29/99
MERCURY LABORATORY	LC1 BS	S	99C0278	N/A	09/24/99	09/27/99

019

Recre LabNet - Lionville Laboratory  
 INORGANIC ANALYTICAL DATA PACKAGE FOR  
 TNU-HANFORD B99-078

DATE RECEIVED: 09/03/99

RFW LOT # :9909L008

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY, TOTAL	MB1	S	99C0278	N/A	09/24/99	09/27/99
NICKEL LABORATORY	LC1 BS	S	99L0654	N/A	09/24/99	09/29/99
NICKEL, TOTAL	MB1	S	99L0654	N/A	09/24/99	09/29/99
LEAD LABORATORY	LC1 BS	S	99L0654	N/A	09/24/99	09/29/99
LEAD, TOTAL	MB1	S	99L0654	N/A	09/24/99	09/29/99
ANTIMONY LABORATORY	LC1 BS	S	99L0654	N/A	09/24/99	09/29/99
ANTIMONY, TOTAL	MB1	S	99L0654	N/A	09/24/99	09/29/99
SELENIUM LABORATORY	LC1 BS	S	99L0654	N/A	09/24/99	09/29/99
SELENIUM, TOTAL	MB1	S	99L0654	N/A	09/24/99	09/29/99
THALLIUM LABORATORY	LC1 BS	S	99L0654	N/A	09/24/99	09/29/99
THALLIUM, TOTAL	MB1	S	99L0654	N/A	09/24/99	09/29/99
VANADIUM LABORATORY	LC1 BS	S	99L0654	N/A	09/24/99	09/29/99
VANADIUM, TOTAL	MB1	S	99L0654	N/A	09/24/99	09/29/99
ZINC LABORATORY	LC1 BS	S	99L0654	N/A	09/24/99	09/29/99
ZINC, TOTAL	MB1	S	99L0654	N/A	09/24/99	09/29/99



Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			B99-078-107	Page 1 of 2 0789-1-99
Collector Bowers/Porter/Nielson		Company Contact Chris Cearlock		Telephone No. 372-9574	Project Coordinator TRENT, SJ	Price Code 8N Data Turnaround 45 Days
Project Designation 200 Area Source characterization - 200-CW-1 OU		Sampling Location GP-12		SAF No. B99-078		
Ice Chest No. ERC96-036		Field Logbook No. EL-1511		Method of Shipment <del>gov vehicle</del> RJA/2/99 Federal Express		
Shipped To TMA/RECRA 078 9-1-99		Offsite Property No. A990240		Bill of Lading/Air Bill No. 423579529013		
				COA B20CW1671C		

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	Cool 4C	None								
	Type of Container	aG	aG								
	No. of Container(s)	1	1								
	Special Handling and/or Storage	Volume	500mL	1000mL							

SAMPLE ANALYSIS		See item (1) in Special Instructions.	See item (2) in Special Instructions.								
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Sample No.	Matrix *	Sample Date	Sample Time								
001 ✓ BOW9K0	Soil	9-1-99	0718	X		3'-7'					Bow 5-8
002 ✓ BOW9K1	Soil	9-1-99	0710	X		3'-9'					Bow 5-8
003 ✓ BOW9K2	Soil	9-1-99	0735	X		7'-8'					Bow 5-8
004 ✓ BOW9K3	Soil	9-1-99	0756	X		9.5'-10.5'					Bow 5-8
005 ✓ BOW9K4	Soil	9-1-99	0803	X		12'-13'					Bow 5-8

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS See chain of custody comments on SAF B99-078.				Matrix *	
Relinquished By Doug Bowers Doug Bowers	Date/Time 9-1-99/1200	Received By RJA	Date/Time 9-1-99/1200	(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196 (2) Gamma Spec - Complete {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155} Samples unavailable to relinquish samples. RJA/2/99				Soil	
Relinquished By RJA	Date/Time 9/2/99 0900	Received By R. Nielson	Date/Time 9/2/99					Water	
Relinquished By R. Nielson	Date/Time 9/2/99 1330	Received By Fed Ex	Date/Time					Vapor	
Relinquished By Fed Ex	Date/Time 9-3-99 0930	Received By H. Hernandez	Date/Time 9-3-99 0930					Other Solid	
LABORATORY SECTION		Received By		Date/Time				Other Liquid	
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time	

001 ✓  
002 ✓  
003 ✓  
004 ✓  
005 ✓  
0918  
0921  
0922

Temp 3

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			B99-078-107	Page 2 of 2 0789-1-99
Collector Bowers/Porter/Nielson		Company Contact Chris Cearlock		Telephone No. 372-9574	Project Coordinator TRENT, SJ	Price Code 8N Data Turnaround 45 Days
Project Designation 200 Area Source characterization - 200-CW-1 OU		Sampling Location GP-12		SAF No. B99-078		
Ice Chest No. ERC96-036		Field Logbook No. EL-1511		Method of Shipment gov vehicle RIN 91000 Federal Express		
Shipped To TMA/RECRA 0789 9-1-99		Offsite Property No. A990240		Bill of Lading/Air Bill No. 423579529013		
COA B200CW1671C						

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	Cool 4C	None								
		Type of Container	aG	aG							
Special Handling and/or Storage	No. of Container(s)	1	1								
	Volume	500mL	1000mL								

SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions.							
Sample No.	Matrix *	Sample Date	Sample Time									

006 ✓ BOW9K5	Soil	9-1-99	0827	X		13'-14'		Bow 41				
007 ✓ BOW9K6	Soil	9-1-99	0825	X		14'-15'		Bow 48				
008 ✓ BOW9K7	Soil	9-1-99	0832	X		17'-18'		↓				
009 ✓ BOW9K8	Soil	9-1-99	0845	X		22'-23'		↓				
010 ✓ BOW9K9 BOW4L9	Soil	9-1-99	0855	X		24'-25'		↓				

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS See chain of custody comments on SAF B99-078.				Matrix *	
Relinquished By: Doug Bowers 9-1-99 1200		Received By: REF 10 9-1-99 1700		(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); ICP Metals - 6010A (Supertrace Add-On) (Beryllium, Copper, Nickel, Vanadium, Zinc); Mercury - 7471 - (CV); Chromium Hex - 7196 (2) Gamma Spec - Complete (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155) Sampler unavailable to relinquish samples. RSN 91000				Soil Water Vapor Other Solid Other Liquid	
Relinquished By: REF 10 9-2-99 0900		Received By: R. Nielson 9-2-99							
Relinquished By: R. Nielson 9-2-99		Received By: Fed 64							
Relinquished By: Fed 64 9-3-99 0930		Received By: V. Henry 9-3-99 0930							
LABORATORY SECTION	Received By	Title		Disposed By				Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Method			Disposed By				Date/Time	